

LED lighting: time to reflect?



The BAA Commission for Dark Skies has been working for over 25 years towards a sane and properly regulated lighting regime in the UK. During that time, laws have been passed concerning sky beams, which now need a permit to be used, and light intrusion into premises (Clean Neighbourhoods Act 2005). Over the years road lights have become increasingly better designed, and most of them now shine downwards and not into the night sky. Private lighting remains unregulated. The latest trend in lighting is the **LED** – enormous numbers of these are now rapidly replacing older sodium types.

LEDs are a double-edged sword. On the positive side, they can be easily downward-directed, and consume less energy with consequential environmental benefits. They can also be motion-operated, enabling them to be used in applications where lighting is needed only where necessary, when necessary and in the correct amounts, using well designed full cut-off technology. LED-based street lighting in suburban and residential settings, especially when combined with midnight till dawn curfews, offers opportunities for a substantial reduction in light pollution and a better view of the night sky, without loss of amenity.

However, the downside of LED lighting is that it is often too bright for the lighting task, mounted such that it shines into premises (including bedrooms); and its blue-rich 'daylight' spectrum (over 3000K) contributes to circadian disruption in humans and other organisms. It is devastating to insects, killing them in vast numbers. This can only get worse if such lights become the norm. LEDs may well be very cheap once they can be mass produced, allowing consumers to purchase more lights for the original cost of one, resulting in a concomitant **increase** in light pollution. This threat must be averted before it becomes a reality. **We have to be very careful how this new technology is applied.** If applied judiciously it could be beneficial, but if the downsides are not taken into consideration, as has already been happened in many areas, problems will arise. Residents in many areas complain about glary LED lighting from inappropriately installed street lights and cheap domestic exterior lights affecting their ability to get a good night's sleep.

The danger is the threat of **over-lighting** and using the **wrong spectrum**. Alternative wavelengths are available. This technology must be managed carefully, otherwise its potential benefits could be easily be negated by the disadvantages outlined above.